described in the specification. After a review of the drawings, and the claims as originally written, it is clear that the original claim language contained certain language informalities which overly broadened the scope of those claims. Applicant has amended the claims above to clarify that the device reacts to barometric pressure by either (1) changing the volume of the housing in response to an external pressure increase (New Claim 67), or (2) maintaining the pressure of the interior of the housing in response to an external barometric pressure decrease (New Claim 68). In both of these claims, it is the characteristics of the walls themselves, either being rigid or flexible, than enables the device to appropriately react to barometric pressure changes. As such, and as shown properly in Figs. 1-2, and 5-6, the walls themselves properly comprise the means by which pressure is either maintained inside the device, or transmitted from the surrounding environment into the device.

Based on the amendments made to the claims above, Applicant submits that all elements claimed in the present claims are shown in the drawings. The Examiner contends that certain elements are not show, and offers as examples a gas generating cell (New Claim 71), and a piezoelectric cell (New Claim 72). The gas generating cell and piezoelectric cell are shown in the drawings, however. As can be seen in Fig 5, a gas generating cell is labeled as element 48. As is defined in the specification, the gas generating cell can comprise "a conventional electrochemical gas generating cell, piezoelectric cell or other non-electrochemical gas generating cell." (Specification, P. 19, Lines 15-16). Thus, all elements claimed in the present application are shown adequately in the claims.

Based on the above, Applicant submits that the Examiner's objections to the drawings have been overcome, and respectfully requests that the Examiner withdraw the objections.

The Examiner has rejected Claims 1-17, 20, 26-43, 52 and 61 under 35 U.S.C. §112, based on a variety of contentions. Specifically, the Examiner has rejected Claims 33-40 based on the

contention that they contain subject matter that was not described in the specification in such a way as to enable one of ordinary skill in the art to make/use the invention. Additionally, the Examiner has rejected Claims 1-17, 20, 26-43, 52 and 61, based on the contention that they are indefinite for including expressions that lack an antecedent basis. Applicant will address each of the Examiner's contentions in turn.

First, the Examiner has held that the bolus, disclosed in Claims 33-40, is not disclosed in the specification in such a way that would enable one of ordinary skill in the art to make and/or use the invention. Applicant respectfully traverses the Examiner's rejection. A bolus is a term of art that refers to a dose of a substance, or, sometimes, a device for delivering that dose. The specification notes that the claimed invention can include, among other things "means 32 for providing a bolus . . . ." (Specification, P. 14, lines 12-13). The bolus providing means can comprise a second opening 42 in the housing for delivering a fluid, and delivering means 44 for delivering a fluid through the second opening 42. The delivering means 44 is further described as possibly comprising an atomizer or a spray pump.

The above description helps to illustrate the nature and structure of the means for providing a bolus 32 described in the specification. As can be seen from the above, the specification clearly includes sufficient support that one of ordinary skill in the art could make and use a bolus providing means 32 as claimed in Claims 33-40. Thus, Applicant submits that the Examiner's rejection of those claims is not appropriate, and respectfully requests that the Examiner withdraw the rejection.

Second, the Examiner has rejected a number of claims as including elements that lack an antecedent basis. Applicant has amended those claims to correct for the informalities noted by the Examiner. Applicant notes, however, that the Examiner has apparently mistakenly held that certain elements lack an antecedent basis. These elements include "the outer surface" in Claim 20, "the

quantity of fluid" in Claim 33, and "the volatilization means" in Claims 39 and 40. Each of these elements does in fact have an antecedent basis, and thus Applicant has not amended those claims at all. Given the above-mentioned amendments, therefore, Applicant submits that the Examiner's rejections under 35 U.S.C. §112 have been overcome.

The Examiner has substantively rejected the present claims under a variety of prior art references. Specifically, the Examiner has rejected Claims 1, 3, 6-10, 12, 14-17, 26-29, 52 and 61 under 35 U.S.C. §102(b) based on the contention that they are anticipated by at least one of U.S. Patent No. 5,700,245, issued to Sancoff et al (Sancoff '245), U.S. Patent No. 4,175,704, issued to Cohen (Cohen '704), U.S. Patent No. 4,312,347, issued to Magoon et al (Magoon '347), and U.S. Patent No. 4,886,514, issued to Maget (Maget '514). Applicant respectfully traverses the Examiner's rejections. Applicant has, however, amended the above claims so as to better clarify the present invention.

Specifically, Applicant has deleted Claims 2-8, 11-12, and 43, and has incorporated some or all of those elements into amended Claims 1, 52 and 61, and in new Independent Claims 66-73. Each of these new independent claims highlights one preferred embodiment of the invention by claiming former dependent claims in independent form. For example, Claim 1 now contains the subject matter previously disclosed in Claim 2. Similarly, Claim 66 incorporates former Claim 43, Claim 67 incorporates former claim 12, Claim 68 incorporates the substance of former claim 4, Claim 69 incorporates the substance of former Claim 5, Claim 70 incorporates former Claims 6 and 7, Claim 71 incorporates former Claims 6 and 8, and, finally Claim 72 incorporates former Claims 6 and 11. Applicant has additionally added Claim 73, which comprises the substance of Claim 20 in independent form. None of these new independent claims or the newly amended claims, are taught, disclosed or suggested by any of the references cited by the Examiner.

The Examiner had previously rejected a number of the now independent claims as being anticipated by one of the cited references. Claim 12 was rejected as being anticipated by one of Sancoff '245, or Cohen '704. New Claim 67, however, includes additional limitations that are not shown in Sancoff '245 or Cohen '704. Specifically, Claim 67 as added specifies that the volume change of the housing is affected in response to external barometric pressure changes proximate the housing. Neither Sancoff '245 nor Cohen '704 shows such a device. Further, as Sancoff '245 and Cohen '704 are specifically directed towards manual manipulation of housing volume, they teach away from the present invention which relies upon environmental conditions to deliver a fluid. As such, newly added Claim 67 is not taught, disclosed, or suggested by any of the references cited by the Examiner.

The Examiner additionally rejected the combination of former Claims 6 and 7 as being anticipated by Sancoff '245. Sancoff '245 shows an apparatus and method for the controlled delivery of fluid in which chemical reactants are combined through manual breaking of a seal, which reactants then produce a gas which drives a fluid out of the device. Sancoff '245 includes a one-way valve 40 which allows gas and fluid out of the device, and a channel 50, which is entirely open, for the entry of the reactant gases into the housing. The device in Sancoff '245, however, fails to show a means for facilitating one-way passage of a gas into the housing and precluding passage of gas from within the housing, as claimed in the present Claim 70. In fact, Sancoff '245 teaches the exact opposite device, having a one-way valve letting air and fluid out, and a completely open channel 50 that allows the free influx of gasses into an out of the reservoir. Thus, not only does Sancoff '245 fail to teach or disclose Claim 70 as now written, but Sancoff '245 actually teaches away from Claim 70, having the exact opposite structural elements. Thus, Claim 70 is not taught, disclosed or suggested by any references cited by the Examiner.

Finally, the Examiner additionally rejected Claim 8, which depended from Claim 6, as being anticipated by Maget '514. Maget '514 discloses an electrochemically driven drug dispenser for dispensing a drug at a controlled rate. The drug is delivered out of a reservoir by pumping an electrolyte from one portion of the electrochemical pump into another portion of the pump adjacent the reservoir. The second portion of the pump has a diaphragm wall which extends into the reservoir, pushing the drug out. Maget '514, however, fails entirely to show means for pressurizing the interior of the housing comprising a gas generating cell, as is now claimed in Claim71. Maget '514 is solely directed to electrochemical pumps, which are a completely different technology than gas generating cells. Because the two technologies are so different, Maget '514 not only fails to teach or disclose the invention claimed in claim 71, but would never even suggest such an invention. Therefore, Claim 71 should be in patentable condition as now written.

The remaining claims in the original application, namely Claims 2, 4, 5, 6+11, and 43, were all rejected by the Examiner under 35 U.S.C. §103(a), based on the contention that they were unpatentable over one or more prior art references. Specifically, former Claim 2 was rejected as being unpatentable over Cohen '704, Magoon '347, Maget '514 and Sancoff '245, in view of U.S. Patent No. 5,373,581, issued to Smith (Smith '581). The Examiner contended that Smith '581 demonstrated the means for increasing temperature as claimed in Claim 2. Smith '581 discloses a structure for an automobile plug-in air freshener. The device includes a body portion that plugs into a cigarette lighter adapted in a car, and a planar refill container or cartridge 16 attached to the end. The planar refill cartridge 16 includes a heating element 18 that helps to volatilize the fragrance. From this structure, however, it is clear that Smith '581 does not disclose any means for increasing temperature within the housing so as to increase pressure of the gas within the housing and, in turn, deliver a fluid from the housing, as claimed in amended Claims 1, 52, and 61. Instead, Smith '581 discloses an open

system in which a heating element is placed completely outside the housing. As the system is open, there would be no effect of heating the internal air volume of the unit. Further, there is no fluid to be delivered out of the device in Smith '581, but instead only a volatilizing fragrance. Thus, amended claims 1, 52, and 61 are not rendered unpatentable by the disclosure in Smith '581, as that reference fails altogether to teach, disclose or suggest the claimed elements.

Similarly, former Claims 4, 5 and 43 were rejected as being obvious over the combination of Cohen '704, Maget '514, Magoon '347, and Sancoff '245. The Examiner contended that the given the teachings of those references, the claimed subject matter of Claims 4, 5 and 43 would have been obvious design choices. Applicant respectfully disagrees. The former language of Claims 4 and 5 have been amended and inserted into new claims 68 and 69, rendering those claims clearer in their boundaries. Further, Claim 43 has been amended and incorporated into independent Claim 66 to specifically claim itself in an airplane environment. Given these new claims, it is easily apparent that none of the references cited by the Examiner come close to teaching, disclosing or even suggesting the present Claims 66, 68, and 69, as now added. Therefore, Applicant respectfully submits that those Claims should also now be in condition for allowance.

Former Claim 11 was rejected as being unpatentable over the above combination, in further view of U.S. Patent No. 3,679,132, issued to Vehe et al (Vehe '132). Vehe '132 teaches a jet stream vibratory atomizing device for dispensing a fluid. The Examiner contends that Vehe '132 discloses a piezoelectric cell as elements 26 and 30. Element 26, as disclosed in Vehe '132 is a shaft (Vehe '132, Col. 3, line58), while element 30 comprises a set of conductor windings which surround the shaft. Neither of these elements, nor indeed any elements in Vehe '132, comprises a piezoelectric cell. A piezoelectric cell operates to generate electricity when stressed, such as when it is placed under pressure. Typically, such cells are made of a crystalline material. Therefore, Vehe '132 fails

altogether to show a piezoelectric cell, and the present Claim 72 is neither taught, disclosed, nor suggested by that reference.

As a final note, Applicant has added Claim 73 which incorporates the elements of Claim 20, as well as all of the claims from which that Claim depends. In the Office Action mailed on June 19, 2002, the Examiner stated that Claim 20 would be deemed allowable if rewritten in independent form, including all the limitations of the claims from which it depends. Therefore, the newly added Claim 73 should be in allowable condition as written.

Based on the above, Applicant submits that newly amended Claims 1, 52, and 61, as well as newly added Claims 66-73, should now be in condition for allowance. Further, the remaining Claims in the application, namely Claims 9-10, 13-17, 20, and 26-42, all depend from the independent claims above, and should therefore also be in allowable condition. Therefore, reconsideration and passage to allowance of Claims 1, 9-10, 13-17, 20, 26-42, 52, 61, and 66-73, is respectfully requested.

Should anything further be required, a telephone call to the undersigned, at (312) 226-1818, is respectfully invited.

Respectfully submitted,

FACTOR & PARTNERS, LLC

Dated: December 19, 2002

Jacob D. Koering
One of Attorneys for Applicant

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Assistant Commissioner for Patents, Washington, D.C. 20231 on December 19, 2002.

Jacob D. Koering

AMENDED CLAIMS WITH MARKINGS TO SHOW CHANGES

1. A device for delivering a fluid comprising:

- a housing having an interior region and an opening;

- a quantity of fluid within the interior of housing;

- means for causing a pressure differential between the interior region of housing and [the] an immediate surroundings of the housing, wherein the pressure differential causing means comprises means for increasing temperature within the housing so as to increase pressure of the gas within the housing which, in turn, forces a predetermined quantity of fluid from within the interior region of the housing to the opening; and

- means associated with the opening for controlling [the] flow of the quantity of fluid through the opening.

9. The device according to claim [8] 71 wherein the gas generating means comprises an electrochemical gas generating cell.

10. The device according to claim [8] 71 further including means for selectively activating the gas generating cell.

13. The device according to claim [12] 67 wherein the external pressure results in a change of at least one of temperature or barometric pressure within the housing.

52. A method of delivering a fluid comprising the steps of:

- providing a fluid within a housing;

- providing an opening in fluid communication with the surroundings of the housing and with the fluid;

- absorbing a temperature increase from the surrounding environment to, in turn, [causing] cause a pressure differential between the housing and the surroundings of the housing; and

- utilizing the pressure differential to direct fluid through the opening.

61. A device for delivering a fluid comprising:

- a housing having an interior and an opening;

- a quantity of fluid within the interior of housing, the fluid having an effective dose;

- means for forcing a predetermined quantity of fluid from within the interior of the housing to the opening, the forcing means comprising means for increasing temperature within the housing so as to increase pressure of the gas within the housing; and

- means associated with the opening for controlling the flow of fluid through the opening, at a flow rate substantially corresponding to the effective dose of the fluid.